In the Specification:

Please amend the Specification as follows:

Please amend the paragraph beginning on page 1, line 9 to read as follows:

When an electromagnetic transducer such as a giant magnetoresistive (GMR) element is utilized to read ~~out a~~ out magnetic information data, for example, a sensing current is supplied to the electromagnetic transducer. The inversion of the direction of an acting magnetic flux or field induces variation in the voltage appearing in the electromagnetic transducer in response to supply of the sensing current. Such variation in the voltage serves to identify the magnetic binary data. The higher the recording density is to be achieved in a magnetic recording medium such as a hard disk, a larger current value is required to the sensing current. Without the sensing current of a larger current value, it is supposedly impossible to read the magnetic information data out of the magnetic recording medium without an error.

Please amend the paragraph beginning on page 1, line 23 to read as follows:

On the other hand, a sensing current of an increased current value is supposed to induce deterioration in the electromagnetic transducer and/or to shorten the lifetime of the electromagnetic transducer. It is thus required to set the current value of the sensing current at the highest level which still ensures a longer lifetime of the electromagnetic transducer.

Heretofore, no specific method of determining the magnitude of the sensing current ~~has not~~ has been proposed to meet this demand.

Please amend the paragraph beginning on page 2, line 9 to read as follows:

It is accordingly an object of the present invention to provide a method of determining the magnitude or current value of a sensing current, which is capable of setting the sensing current of a larger magnitude while satisfying the ~~demand to~~ demand for a longer lifetime of an electromagnetic transducer.

Please amend the paragraph beginning on page 10, line 9 to read as follows:

The biasing circuit 42 is designed to receive the connection of a data signal amplifier 48 and an examination signal amplifier 49. The data signal amplifier 48 is designed to amplify variation in the voltage appearing in the sensing channel 44 in response to supply of the electric current from the biasing circuit 42. The amplified variation in the voltage is supplied to the MPU 34 of the HDD controller circuit 32. This amplified variation represents ~~a magnetic~~ magnetic information data. Likewise, the examination signal amplifier 49 is designed to amplify a potential difference appearing in the sensing channel 44 in response to supply of the electric current from the biasing circuit 42. The amplified potential difference is supplied to the MPU 34 as a voltage value signal.

Please amend the paragraph beginning on page 10, line 22 to read as follows:

Next, a brief description will be made on the operation of the HDD 11. When the general controller unit 33 receives instructions for reading out ~~a magnetic~~ magnetic magnetic information data, the general controller unit 33 instructs to start the rotation of the magnetic recording disk 22. The MPU 34 serves to designate an appropriate one of the MR elements 45 to be employed to read out the magnetic information data. The biasing circuit 42 then selects the specific sensing channel 44 connected to the designated MR element 45. An electric current path is established between the designated MR element 45 and the first electric current source 40.

Please amend the paragraph beginning on page 11, line 2 to read as follows:

The MPU 34 is then allowed to obtain ~~a current~~ current value information data representing the current value for the sensing current. The current value information data is previously stored in the flash memory 36. The current value information data contains the current values unique to the respective MR elements 45. The current values are determined or set based on variation in the temperature of the individual MR element 45, as described later in detail. The MPU 34 then supplies an instructions signal specifying the obtained current value information data to the first D/A converter 38. The first D/A converter 38 outputs an analog signal designed to represent the current value included in the instructions

signal. The first electric current source 40 outputs the electric current of the current value designated by the analog signal.

Please amend the paragraph beginning on page 11, line 16 to read as follows:

The electric current from the first electric current source 40, namely, a sensing current is supplied to the designated MR element 45 through the selected sensing channel 44. The electric resistance varies at the designated MR ~~element 44~~ element 45, which receives the sensing current, in response to the direction of the magnetic flux or field established based on the magnetic binary data stored in the magnetic recording disk 22. Variation in the voltage thus appears in the sensing channel 44 in response to inversion of the magnetic flux or field. The variation in the voltage is then supplied to the MPU 34 after being amplified at the data signal amplifier 48. The magnetic information data is read out of the magnetic recording disk 22 in this manner.

Please amend the paragraph beginning on page 11, line 29 to read as follows:

On the other hand, the MPU 34 serves to designate an appropriate one of the thin film magnetic head element 47 to be employed to write ~~a magnetic~~ magnetic information data in the magnetic recording disk 22, when the general controller unit 33 receives instructions for recording the magnetic information data. The current supplying circuit 43 then selects the specific current supplying channel 46 connected to the designated

thin film magnetic head element 47. The MPU 34 thereafter serves to supply an instructions signal specifying a predetermined current value to the second D/A converter 39 in the aforementioned manner. The second D/A converter 39 outputs an analog signal designed to represent the current value included in the instructions signal. The second electric current source 41 outputs the electric or writing current of the current value designated by the analog signal. The thin film magnetic head element 47 is thus allowed to write the magnetic binary data into the magnetic recording disk 22 in response to supply of the electric or writing current.

Please amend the paragraph beginning on page 12, line 16 to read as follows:

Next, a detailed description will be ~~made on~~ made of a method of determining the magnitude or current value of the sensing current, referring to the flowchart shown in Fig. 5. Here, the method can be realized based on the operation or processing of the MPU 34. The MPU 34 operates in accordance with the computer program or firmware stored in the flash memory 36, for example. The method of determination may be conducted at a factory of the HDD 11 after the HDD 11 has been assembled. Additionally, the method may be conducted every time when the HDD 11 is turned on. A specific instructions signal may be input to the interface circuit 35 from the outside of the HDD 11 so as to allow the MPU 34 to achieve the processing in the same manner as the aforementioned firmware stored in the flash memory 36.

Please amend the paragraph beginning on page 13, line 12 to read as follows:

A potential difference, namely, a first voltage value V_{ini} appears in the sensing channel 44 in response to supply of the examination current. The first voltage value V_{ini} is supplied to the MPU 34 after being amplified at the examination signal amplifier 49. The MPU 34 detects the first voltage value V_{ini} appearing in the designated MR element 45 in this manner at step S2.